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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/828,292

04/21/2004

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08/03/2007

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EXAMINER

RENNER, CRAIG A

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

08/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/828,292	Applicant(s) SHIMAZAWA ET AL.	
	Examiner Craig A. Renner	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings were received on 18 May 2007. These drawings are accepted.

Specification

2. The disclosure is objected to because of the following informality:

In lines 15-16 of claim 13, "film the bottom electrode layer, constituting" should be --film, the bottom electrode layer constituting-- for better clarity. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Pinarbasi (US 2003/0002229).

Pinarbasi (US 2003/0002229) teaches a magnetoresistive effective element comprising a first shielding layer (80), a second shielding layer (82), a magnetoresistive effective film (includes at least layers 200, 202 and 203 of 74, for instance), a first gap

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film (224, for instance), a pair of magnetic domain controlling layers (134 and 136), and a bottom electrode layer (216), the first shielding layer and the second shielding layer being separated by a given distance (as shown in FIGS. 6-7 and 9-11, for instance), the magnetoresistive effective film being disposed in between the first shielding layer and the second shielding layer (as shown in FIGS. 6-7 and 9-11, for instance), the first gap film being made of electrical conductive material (as shown in FIGS. 10-11, for instance, i.e., "Ta," for instance, is electrical conductive material), and formed on the magnetoresistive effective film commensurate with a surface configuration of the magnetoresistive effective film (as shown in FIGS. 10-11, for instance), the magnetic domain controlling layers surround and extend along both sides of the magnetoresistive effective film, respectively (as shown in FIG. 9, for instance), the bottom electrode layer being electrically connected to the magnetoresistive effective film on a side away from the first gap film (as shown in FIGS. 10-11, for instance), the bottom electrode layer constituting one of a pair of second gap layers (as shown in FIGS. 10-11, for instance), the second shielding layer functioning as a top electrode layer electrically connected to the first gap film (as shown in FIGS. 10-11, for instance, and lines 13-16 in paragraph [0033] on page 3, for instance), and the second shielding layer constituting another of the pair of second gap layers (as shown in FIGS. 6-7, for instance) [as per claim 13]; wherein the magnetoresistive effective film is made of a spin valve film or a ferromagnetic tunnel junction film (lines 1-4 in paragraph [0008] on page 1, for instance, i.e., a ferromagnetic tunnel junction film) [as per claim 14]; wherein the first gap film is made of metal (as shown in FIGS. 10-11, for instance, i.e., "Ta," for instance, is metal)

[as per claim 15]; wherein a total thickness of the magnetoresistive effective film and the first gap film is set larger than a thickness (i.e., at least a smallest thickness, for instance) of the magnetic domain controlling layers (as shown in FIG. 9, for instance) [as per claim 16]; and wherein both sides of the second shielding layer are depressed at both sides of the magnetoresistive effective film in a front view, respectively (as shown in FIG. 9, for instance) [as per claim 17].

Pertinent Prior Art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes:

Hasegawa (US 2003/0143431), which teaches a magnetoresistive effective element comprising a first shielding layer, a second shielding layer, a magnetoresistive effective film, a first gap film, a pair of magnetic domain controlling layers, and a bottom electrode layer, the first shielding layer and the second shielding layer being separated by a given distance, the magnetoresistive effective film being disposed in between the first shielding layer and the second shielding layer, the first gap film being made of electrical conductive material, and formed on the magnetoresistive effective film commensurate with a surface configuration of the magnetoresistive effective film, the magnetic domain controlling layers surround and extend along both sides of the magnetoresistive effective film, respectively, the bottom electrode layer being electrically connected to the magnetoresistive effective film on a side away from the first gap film, the bottom electrode layer constituting one of a pair of second gap layers, the

second shielding layer functioning as a top electrode layer electrically connected to the first gap film, and the second shielding layer constituting another of the pair of second gap layers; and

Kagami et al. (US 2004/0061986), which teaches a magnetoresistive effective element comprising a first shielding layer, a second shielding layer, a magnetoresistive effective film, a first gap film, a pair of magnetic domain controlling layers, and a bottom electrode layer, the first shielding layer and the second shielding layer being separated by a given distance, the magnetoresistive effective film being disposed in between the first shielding layer and the second shielding layer, the first gap film being made of electrical conductive material, and formed on the magnetoresistive effective film commensurate with a surface configuration of the magnetoresistive effective film, the magnetic domain controlling layers surround and extend along both sides of the magnetoresistive effective film, respectively, the bottom electrode layer being electrically connected to the magnetoresistive effective film on a side away from the first gap film, the bottom electrode layer constituting one of a pair of second gap layers, the second shielding layer constituting another of the pair of second gap layers.

Response to Arguments

6. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

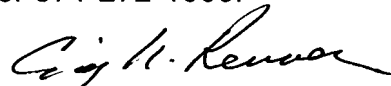
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (571) 272-7580. The examiner can normally be reached on Tuesday-Friday 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Craig A. Renner
Primary Examiner
Art Unit 2627

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